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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,541	07/10/2003	Seng Geap Goh	70030066-1	5179
57299	7590	11/12/2008		
Kathy Manke Avago Technologies Limited 4380 Ziegler Road Fort Collins, CO 80525			EXAMINER KIM, RICHARD H	
			ART UNIT 2871	PAPER NUMBER
			NOTIFICATION DATE 11/12/2008	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/618,541	<b>Applicant(s)</b> GOH ET AL.	
	<b>Examiner</b> RICHARD H. KIM	<b>Art Unit</b> 2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2008.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 5,6 and 8-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,7 and 11-20 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election with traverse of the Election Restriction Requirement in the reply filed on August 4, 2008 is acknowledged. The traversal is on the ground(s) that the allegation of the identified species would require different field of search is not backed with any specifics in terms of different classes/subclasses that maybe have been used. This is not found persuasive because the test of whether the species would require a different field of search is not restricted to whether the different field of search would involve different classes/subclasses, but also as to whether the different field of search would employ different search queries. Since the species are distinct and independent, different queries would be required for each distinct invention, which would therefore require the search and examination of the distinct species to be made with "serious burden".

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 7 and 11-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Murdock (US 5,853,383) in view of Wolcott (US 4,859,378).

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3. Referring to claims 1 and 7, Murdock discloses a device comprising a substrate (18) having a first side and a second side, the substrate defining one or more holes (13a, 13b) from the first side to the second side; and a plastic member for mounting to the first side of the substrate (col. 9, line 26, 27), the plastic member comprising a thermoplastic heat stake having a shaped tip selected such that when reformed using heat, the thermoplastic material of the shaped tip forms a lump on the substrate (col. 9, line 26-30). However, the reference does not disclose that the substrate additionally defines a V-shaped recess located about the hole on the substrate, wherein the lump is confined inside the recess of the substrate.

4. Wolcott discloses a device comprising one or more holes with a V-shaped recess located about the hole, wherein the lump is confined inside the recess of the substrate (Fig. 1, ref. 20).

5. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a V-shaped recess about the hole, wherein the lump is confined inside the recess of the substrate in order since one would be motivated for the recess "to receive and be filled with molten and displaced material..." (col. 2, line 30-31). This would allow the device to maintain a smooth planar surface as shown in Figure 2.

6. Referring to claims 2 and 12, Murdock discloses a method comprising providing a substrate (18) having a first side and a second side; providing a hole (13a, 13b) in the substrate from the first side to the second side; providing a plastic member on the first side of the substrate, the mounting comprising insertion of the thermoplastic heat stake into the hole in the substrate; and heating a shaped tip of the thermoplastic heat stake whereby the thermoplastic material of the shaped tip is melted (col. 9, lines 26-30). However, the reference does not disclose providing a recess about the hole on the second side; and wherein the melted shaped tip

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is confined inside the recess of the substrate, wherein the shaped tip is selected to have a volume whereby when heated the thermoplastic material of the shaped tip is deformed and confined inside the recess of the substrate.

7. Wolcott discloses a method of providing a recess about the hole on the second side; and wherein the melted shaped tip is confined inside the recess of the substrate, wherein the shaped tip is selected to have a volume whereby when heated the thermoplastic material of the shaped tip is deformed and confined inside the recess of the substrate, wherein the shaped tip is selected to have a volume whereby when heated the thermoplastic material of the shaped tip is deformed and confined inside the recess of the substrate (Fig. 1, ref. 20; Fig. 2, ref. 14).

8. It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a recess about the hole on the second side; wherein the melted shaped tip is confined inside the recess of the substrate, wherein the shaped tip is selected to have a volume whereby when heated the thermoplastic material of the shaped tip is deformed and confined inside the recess of the substrate since one would be motivated for the recess "to receive and be filled with molten and displaced material..." (col. 2, line 30-31). This would allow the device to maintain a smooth planar surface as shown in Figure 2.

9. Referring to claim 3, Murdock discloses that the substrate is a printed circuit board (18) and the second side of the PCB is substantially planar for configuring the module as a surface mounted module.

10. Referring to claim 11, Murdock discloses the method further comprising mounting the surface mount module (16) upon a printed circuit board using surface mounting techniques.

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11. Referring to claims 13-15, Murdock discloses a device comprising a substrate (18) having a mounting hole (13a, 13b) extending from a first surface to a second surface; and a component that is mountable upon the first surface of the substrate, the component comprising a thermoplastic heat stake configured for insertion into the mounting hole in the substrate (col. 9, lines 26-30). However, the reference does not disclose that the mounting hole is further defined by a recess located in the second surface; and the thermoplastic heat stake has a tip with a material volume that is selected for deforming under heat to produce a lump that is located wholly inside the recess and is operative to securing the component to the substrate, wherein the second surface is substantially planar with the lump wholly confined inside the recess.

12. Wolcott discloses a method wherein the mounting hole is further defined by a recess located in the second surface; and the thermoplastic heat stake has a tip with a material volume that is selected for deforming under heat to produce a lump that is located wholly inside the recess and is operative to securing the component to the substrate, wherein the second surface is substantially planar with the lump wholly confined inside the recess (Fig. 1, 2; ref. 14, 20).

13. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the mounting hole to be further defined by a recess located in the second surface; and the thermoplastic heat stake to have a tip with a material volume that is selected for deforming under heat to produce a lump that is located wholly inside the recess and is operative to securing the component to the substrate, wherein the second surface is substantially planar with the lump wholly confined inside the recess since one would be motivated for the recess "to receive and be filled with molten and displaced material..." (col. 2, line 30-31). This would allow the device to maintain a smooth planar surface as shown in Figure 2.

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14. Referring to claims 16-18, Murdock and Wolcott disclose the device previously recited, but does not disclose the device wherein the substrate and the components are part of an electronic display, wherein the component is a light diffusing element and wherein the light diffusing element is a plastic light diffusing element.

15. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the substrate and the components to be part of an electronic display, wherein the component is a light diffusing element and wherein the light diffusing element is a plastic light diffusing element since it has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQd 1647 (1987). Furthermore, employing a light diffusing element attached to a printed circuit board is well known in the art in an electronic display. Murdock and Wolcott, in combination, disclose the teaching of securely attaching a device to a printed circuit board. Therefore, the applied references are relevant to the claimed invention.

16. Referring to claim 19, Murdock discloses that the substrate is a PCB (18).

17. Referring to claim 20, Murdock discloses the device previously recited, but fails to disclose that the thickness of the PCB is approximately 1.6 mm.

18. It would have been obvious to one having ordinary skill in the art at the time the invention was made for the thickness of the PCB is approximately 1.6 mm since it has been held that discovering the optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F. 2d 272, 205 USPQ 215 (CCPA 1980).

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*Allowable Subject Matter*

19. Claim 4 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

*Conclusion*

20. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICHARD H. KIM whose telephone number is (571)272-2294. The examiner can normally be reached on 9:00-6:30 M-F.



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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571)272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Richard H Kim/  
Primary Examiner, Art Unit 2871